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## Facilitating effect of amino acids on fructose and sorbitol absorption in children.

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The facilitating effect of glucose on free fructose absorption has been suggested to be due to a sucrase-related transport mechanism. In contrast, the conditions influencing the absorption of sorbitol have hardly been investigated. As amino acids promote transcellular water flow, we investigated their effects on the absorption of fructose and sorbitol. We studied 15 healthy children using breath hydrogen tests following the ingestion of fructose and sorbitol, alone and in combination with glucose or amino acids. Similarly, the effect of acarbose pretreatment on sucrose and fructose-glucose absorption was investigated. The inhibition of sucrase isomaltase by acarbose impedes the absorption of sucrose but not of the fructose-glucose mixture. Fructose absorption is enhanced by glucose and by the amino acids L-alanine, L-glutamine, L-phenylalanine, and L-proline. Similarly, the absorption of sorbitol is facilitated by glucose and L-alanine. These results are not in concordance with a sucrase-related fructose-transport system and suggest another mechanism for glucose-induced enhancement of fructose (and sorbitol) absorption. We hypothesize that the absorption of fructose and sorbitol may be stimulated by the increased water flux induced by active absorption of glucose as well as amino acids.

### Publication Types:

- Clinical Trial
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PMID: 8856576 [PubMed - indexed for MEDLINE]

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10	4	"5674857"	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 10:31
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12	20	CaCo adj cells	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 10:35
14	3834	cellular adj uptake	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:00
15	2127	(cellular adj uptake) and transport	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 10:36
16	0	(cellular adj uptake) and increasing adj the adj transportion	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 10:38
17	0	(cellular adj uptake) and increased adj transportion	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 10:38

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22	1	((cellular adj uptake) and enhanced adj transport) and carbohydrates	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 10:41
24	13	((cellular adj uptake) and enhanced adj transport) and saccharides	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 10:41
23	27	((cellular adj uptake) and enhanced adj transport) and carbohydrate	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 10:42
25	1053	(cellular adj uptake) and carbohydrates	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 10:44
26	894	((cellular adj uptake) and carbohydrates) and amino adj acids	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 10:45
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37	119	((cellular adj uptake) and improved) and saccharide	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:14
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39	0	to adj cells	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:16
40	0	transport adj into adj cells	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:16
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46	9	((contacting adj cells) and saccharides) and amino adj acids) and improves	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:18
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44	55	((contacting adj cells) and saccharides) and amino adj acids) and enhance	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:25
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51	0	(contacting adj cells) and facilitating adj the adj transportation	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:29
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55	44	"155" and amino adj acids	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:30
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58	92407	sucrose	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:36
59	43646	sucrose and cells	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:37
60	9962	(sucrose and cells) and transport	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:38
61	6766	((sucrose and cells) and transport) and amino adj acids	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:39
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63	1240	(((((sucrose and cells) and transport) and amino adj acids) and epithelial) and sorbitol	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:40
64	850	((((((sucrose and cells) and transport) and amino adj acids) and epithelial) and sorbitol) and mannitol	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:40
66	27	((((((((sucrose and cells) and transport) and amino adj acids) and epithelial) and sorbitol) and mannitol) and xylitol) and glutamine	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/07/16 11:41
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